

Taxation and Local Public Sector Economics

Fall 2006

Professor Paul Rothstein

Course Outline

This course is evenly divided into two parts, beginning with Taxation (14 lectures) and followed by Economics of the Local Public Sector (14 lectures). The emphasis in both is on building models and deriving comparative statics results; the careful derivation of key results; and in the second half, close reading of key papers in the literature. While you should certainly pay attention to the particular results we derive, the main value of the course for most of you will be to improve your skills at building models and working through technical papers.

In the first part of the course we derive the classical results in the theory of optimal commodity taxation. The main results here are the Ramsey rule, the “many-person” Ramsey rule, the Atkinson-Stern modification of the Samuelson rule when public goods are financed by commodity taxes, the question of whether public goods are “underprovided” in this context, and related results on the “marginal cost of public funds.” These results are all derived by maximizing some utility function within a simple general equilibrium model. There is a different tradition, however, that derives these results by minimizing the “deadweight loss” created by the tax system. Deadweight loss is an attempt to quantify the inefficiency of non-lump-sum taxation and is also an important application of the tools of welfare economics. We give a fairly rigorous analysis of it and then re-derive the Ramsey rule by minimizing deadweight loss. We finish with the study of tax incidence in the static one-sector model, under both perfect competition and oligopoly, and in the static two-sector (Harberger) model.

The second part of the course considers both classic and current research in the study of the local public sector. We do not, however, spend any time on models in which local public goods cross jurisdictional boundaries (spillover effects). We focus instead on the implications of common factor markets. That is to say, some local resources, like labor and capital, can move costlessly across communities, while others, like land, are “fixed factors” and can not. The primary goal of the analysis is to examine how the objectives of local governments, the instruments available to them, the pattern of factor ownership, and the presence or absence of local public goods affect the equilibria that result. A central concern is whether taxing mobile factors in the location where they are used (at the source of income) to pay for local public

goods leads to a “race to the bottom.” This leads to an economic rationale for fiscal federalism and higher tier government that is distinct from the one provided by spillover effects.

It is worth noting that this literature is relevant beyond the American local public sector. While we generally associate “globalization” with trade, it is also associated with the creation of common factor markets. Also, given the freedom to locate and relocate, factors seem to be increasingly sensitive to public goods and to public inputs into production processes (“infrastructure” including legal systems, culture, stability, etc.). The models developed to study the American (and Canadian) state-local public sector incorporate both common factor markets and public goods and inputs. This makes them interesting to a wider audience.

Requirements

- Four or five problem sets (60%). In the second half of the course some of these will be small research exercises tied to the papers.
- Final exam (40%).

Course Reader

The course reader is in two parts:

Part I (Taxation) and Part II (Local Public Economics).

There is no textbook. There are texts that cover the material on taxation, but they range from poor to dreadful. Instead, I blend different texts into one adequate treatment, but one has to be careful since the books use different (sometimes unstated) assumptions and different (sometimes incorrect) approaches. I have learned all of this over many years of hard and sometimes traumatic experience. We synthesize the material and fill in gaps during lecture.

Office and Office Hours

Office: Eliot Hall, 321D.

Office Hours: TBA.

Assignments

The items listed on the syllabus have the following codes:

1. An item with an asterisk (*) will be discussed in class, although not every section and not every detail. This material is either in the course reader or in Mas-Colell et al., which you own.
2. An item without indicators provides very important background material. This material is also in the course reader.
3. An item in parentheses provides further background material or, in some cases, recent extensions. This material is not in the course reader.

The anticipated number of lectures for each subject appears next to the heading. This corresponds to the following lecture schedule:

Lecture 1

Introduction
Section 1.1

Lecture 2

Section 1.1

Lecture 3

Section 1.2

Lecture 4

Section 1.3

Lecture 5

Sections 1.4 and 1.5

Lecture 6

Section 1.6: Atkinson-Stern

Lecture 7

Section 2.1

Lecture 8

Section 2.1

Lecture 9

Section 2.2

Lecture 10

Section 2.2 Wilson, Gronberg-Liu

Lecture 11

Section 2.2: Jorgenson-Yun (summary), Slesnick (summary), Feldstein

Lecture 12

Sections 3.1 and 3.2

Lecture 13

Section 3.3

Lecture 14

Section 3.3

Lecture 15

Section 4.1

Lecture 16

Section 4.2

Lecture 17

Section 4.2

Lecture 18

Section 5: Myers

Lecture 19

Section 6: Zodrow-Mieszkowski, Wildasin

Lecture 20

Section 6: Wildasin, Brueckner

Lecture 21

Section 6: Dhillon-Wooders-Zissimos

Lecture 22

Section 7: Qian-Roland

Lecture 23

Section 7: Cai-Treisman

Lecture 24

Section 8: Epple-Zelenitz, Henderson

Lecture 25

Section 8: Hoyt

Lecture 26

Section 8: Wilson

Lecture 27

Section 9: Epple-Filimon-Romer, Epple-Romer

Lecture 28

Section 9: Calabrese, Epple, Romer, Sieg

TAXATION

1 Optimal Commodity Taxation (6)

1.1 Incorporating Government and Taxes into the Standard General Equilibrium Model (2)

1. *Rothstein notes (Lecture 1).
2. *Rothstein notes (Lecture 2).

1.2 Ramsey Rule with Linear Technology; Inverse Elasticity Rule (1)

1. *Rothstein notes (Lecture 3).
2. *Myles, Chapter 4: sections 1,2,3.0-3.5 (NOTE THE TYPO in his equation (4.16)).
3. *Auerbach, sections 5-5.1, from “Chapter 2: The Theory of Excess Burden and Optimal Taxation,” in *Handbook of Public Economics, Volume 1*, 1985.
4. Kemp et al., “On the Flatness of the Transformation Surface,” *Journal of International Economics*, 1978.
5. (Samuelson, “Abstract of a Theorem Concerning Substitutability in Open Leontief Models,” in *Activity Analysis of Production and Allocation*, 1951.)

1.3 Corlett-Hague Rule; Ramsey Rule with CRS Technology; Production Efficiency (1)

1. *Rothstein notes (Lecture 4).
2. *Myles, Chapter 4: sections 6,7,9 (in section 7, the interpretation is right but his proof after equation (4.82) is wrong – compare with Auerbach, page 92).
3. *Auerbach, Sections 5.3-5.4.
4. (Diamond and Mirrlees, “Optimal Taxation and Public Production I: Production Efficiency; II: Tax Rules,” *AER*, 1971.)
5. (Slemrod, “Optimal Taxation and Optimal Tax Systems,” *Journal of Economic Perspectives*, 1990.)

1.4 Many-Person Ramsey Rule (.5)

1. *Rothstein notes (Lecture 5).
2. *Myles, Chapter 4: section 4.
3. *Auerbach, Section 6.2.
4. (Diamond, “A Many-Person Ramsey Tax Rule,” *Journal of Public Economics*, 1975.)

1.5 Income Taxation versus Commodity Taxation; Direct Taxation versus Indirect Taxation (.5)

1. *Myles, Chapter 4: section 8.
2. *Atkinson and Stiglitz, Chapter 14: sections 14-1 and 14-3; in *Lectures on Public Economics*, 1980.
3. *Kaplow, “On the Undesirability of Commodity Taxation Even When Income Taxation is Not Optimal,” *Journal of Public Economics*, 2006.
4. (Atkinson and Stiglitz, “The Design of Tax Structure: Direct versus Indirect Taxation,” *Journal of Public Economics*, 1976.)
5. (Deaton and Stern, “Optimally Uniform Commodity Taxes, Taste Differences, and Lump-sum Grants,” *Economics Letters*, 1986.)
6. (Cremer and Gahvari, “Uncertainty and Optimal Taxation: In Defense of Commodity Taxes,” *Journal of Public Economics*, 1995.)

1.6 Indirect Taxation and the Finance of Public Goods (1)

Note: Some of the work on the “marginal cost of funds” is relevant here. Those papers tend to use concepts and techniques developed in the literature on excess burden. We therefore place those papers after the discussion of excess burden. See Section 2.3.

1. *Rothstein notes (Lecture 6).
2. *Atkinson and Stern, “Pigou, Taxation and Public Goods,” *Review of Economic Studies*, 1974.
3. *Myles, Chapter 9: sections 6.0-6.3.
4. (Wildasin, “On Public Good Provision with Distortionary Taxation,” *Economic Inquiry*, 1984.)

2 Welfare Economics and Optimal Commodity Taxation (5)

2.1 Characterizing the Excess Burden of Taxes (2)

1. *Rothstein notes (Lectures 7-8).
2. Mas-Colell, et al., “Welfare Evaluation of Economic Changes,” section 3.I, pages 80-87.
3. Pauwels, “Correct and Incorrect Measures of the Deadweight Loss of Taxation,” *Public Finance/Finances Publiques*, 1986.
For more on the kinds of pictures he draws, see:
Greenberg and Denzau, “Profit and Expenditure Functions in Basic Public Finance,” *Economic Inquiry*, 1988.
4. Auerbach and Rosen, “Will the Real Excess Burden Please Stand Up,” in *The Fiscal Behavior of State and Local Governments: Selected Papers of Harvey S. Rosen*, Edward Elgar Publishing, 1997.
5. Ebert, “Consumer’s Surplus: Simple Solutions To An Old Problem,” *Bulletin of Economic Research*, 1995.
6. Chipman and Moore, “Compensating Variation, Consumer’s Surplus, and Welfare,” *American Economic Review*, 1980.
7. (Debreu, “A Classical Tax-Subsidy Problem,” *Econometrica*, 1954.)
8. (Kay, “The Deadweight Loss from a Tax System,” *Journal of Public Economics*, 1980.)
9. (Boadway and Bruce, *Welfare Economics*, 1989, Chapters 7-9.)
10. (Hines, “Three Sides of Harberger Triangles,” *Journal of Economic Perspectives*, 1999.)

2.2 Applications of Excess Burden Concepts (3)

1. *Rothstein notes (Lecture 9).
2. *Rothstein notes (Lecture 10).
3. *Wilson, “Optimal Public Good Provision with Limited Lump-Sum Taxation,” *American Economic Review*, 1991.
4. *Gronberg and Liu, “The Second-Best Level of a Public Good: An Approach Based on the Marginal Excess Burden,” *Journal of Public Economic Theory*, 2001.
5. *Rothstein notes (Lecture 11).
6. *Jorgenson and Yun, “The Excess Burden of Taxation in the United States,” *Journal of Accounting, Auditing and Finance*, 1991.
7. *Slesnick, “Aggregate Deadweight Loss and Money Metric Social Welfare,” *International Economic Review*, 1991.
8. Mas-Colell, et al., “Welfare Analysis in the Partial Equilibrium Model,” section 10.E, pages 328-334.
9. *Feldstein, “Tax Avoidance and the Deadweight Loss of the Income Tax,” *Review of Economics and Statistics*, 1999.
10. (Blackorby and Donaldson, “A Review Article: The Case Against the Use of the Sum of Compensating Variations in Cost-Benefit Analysis,” *Canadian Journal of Economics*, 1990.)
11. (Goulder and Williams, “The Substantial Bias from Ignoring General Equilibrium Effects in Estimating Excess Burden, and a Practical Solution,” *Journal of Political Economy*, 2003.)
12. (Goolsbee, “The Value of Broadband and the Deadweight Loss of Taxing New Technology,” *Contributions to Economic Analysis & Policy*, 2006.)

2.3 The Marginal Cost of Funds (not in reader)

1. Allgood and Snow, “The Marginal Cost of Raising Tax Revenue and Redistributing Income,” *Journal of Political Economy*, 1998.
2. Sandmo, “Redistribution and the Marginal Cost of Public Funds,” *Journal of Public Economics*, 1998.
3. Slemrod and Yitzhaki, “Integrating Expenditure and Tax Decisions: The Marginal Cost of Funds and the Marginal Benefit of Projects,” *National Tax Journal*, 2001.
4. Gahvari, “On the Marginal Cost of Public Funds and the Optimal Provision of Public Goods,” *Journal of Public Economics*, 2006.

3 Tax Incidence (3)

3.1 Static One-Sector Model (.5)

1. *Rothstein notes (Lecture 12).
2. *Rothstein, notes on “The Representation of Taxation.”
3. *Kotlikoff and Summers, “Chapter 16: Tax Incidence,” sections 1 and 2.1; in *Handbook of Public Economics, Volume 2*, 1987.

3.2 Oligopoly (.5)

1. *Katz and Rosen, “Tax Analysis in an Oligopoly Model,” *Public Finance Quarterly*, 1985.
2. (Besley, “Commodity Taxation and Imperfect Competition: A Note on the Effects of Entry,” *Journal of Public Economics*, 1989.)

3.3 Static Two-Sector Model (2)

1. *Myles, Chapter 8: section 3.
2. “The Harberger Analysis,” in Richard Tresch, *Public Finance: A Normative Theory*, 2002.
3. Ballentine and Eris, “On The General Equilibrium Analysis of Tax Incidence,” *Journal of Political Economy*, 1975.
4. (Atkinson and Stiglitz, Chapter 6.)

ECONOMICS OF THE LOCAL PUBLIC SECTOR

4 Local Governments and Clubs: Foundations (3)

4.1 Two Classics You Should Read Once In Your Lives (1)

1. *Tiebout, “A Pure Theory of Local Expenditures,” *Journal of Political Economy*, 1956.
2. *Buchanan, “An Economic Theory of Clubs,” *Economica*, 1965.

4.2 Basic Ideas in the Analysis of Optima and Equilibria (2)

1. *Atkinson and Stiglitz, Chapter 17: 17-1 and 17-2.
2. *First half of Flatters, Henderson, and Mieszkowski, “Public Goods, Efficiency, and Regional Fiscal Equalization,” *Journal of Public Economics*, 1974.
3. Berliant and Edwards, “Efficient Allocations in Club Economies,” *Journal of Public Economic Theory*, 2004.
4. Schweizer, “Edgeworth and the Henry George Theorem,” *Locational Analysis of Public Facilities*, 1983.
5. *Hartwick, “The Henry George Rule, Optimal Population, and Interregional Equity,” *Canadian Journal of Economics*, 1980.
6. *Section IV of Stiglitz, “The Theory of Local Public Goods Twenty-Five Years After Tiebout: A Perspective,” in Zodrow (ed)., *Local Provision of Public Services: The Tiebout Model After Twenty-Five Years*, Academic Press, 1983.
7. Boadway, “On the Method of Taxation and the Provision of Local Public Goods: Comment,” *American Economic Review*, 1982.
8. *Section III(B) of Stiglitz, “The Theory of Local Public Goods Twenty-Five Years After Tiebout: A Perspective.”
9. (Stiglitz, “Public Goods in Open Economies with Heterogeneous Individuals,” *Locational Analysis of Public Facilities*, 1983.)
10. (Vickrey, “The City as a Firm,” originally published in 1977, in *Public Economics*, Arnott, Arrow, Atkinson, Dreze (eds.), 1996; presents the Henry George Theorem with transportation costs.)

4.3 Other Foundational Work (not in reader)

1. Bewley, "A Critique of Tiebout's Theory," *Econometrica*, 1981.
2. Schweizer, "Efficient Exchange with a Variable Number of Consumers," *Econometrica*, 1983.
3. Scotchmer and Wooders, "Mixed Clubs: Pareto Optimality, the Core and Competition," Discussion paper # 1221, Harvard Institute of Economic Research.
4. Scotchmer and Wooders, "Competitive Equilibrium and the Core in Club Economies with Anonymous Crowding," *Journal of Public Economics*, 1987.
5. Laussel and Le Breton, "Existence of Equilibrium in Fiscal Competition Models," *Regional Science and Urban Economics*, 1998.
6. Conley and Konishi, "Migration-Proof Tiebout Equilibrium: Existence and Asymptotic Efficiency," *Journal of Public Economics*, 2002.
7. Rothstein, "Discontinuous Payoffs, Shared Resources, and Games of Fiscal Competition: Existence of Pure Strategy Nash Equilibrium," 2006.

5 Utility Maximizing Local Governments: Decentralized Efficient Outcomes (1)

1. *Myers, "Optimality, Free Mobility, and the Regional Authority in a Federation," *Journal of Public Economics*, 1990.
2. Oates and Schwab, "The Allocative and Distributive Implications of Local Fiscal Competition," in Kenyon and Kinkaid (eds.), *Competition Among States and Local Governments*, 1991.
3. Krelove, "Efficient Tax Exporting," *Canadian Journal of Economics*, 1992.
4. (Oates and Schwab, "Economic Competition Among Jurisdictions: Efficiency Enhancing or Distortion Inducing?" *JPubE*, 1988.)
5. (Wellisch, "On the Decentralized Provision of Public Goods with Spillovers in the Presence of Household Mobility," *RSUE*, 1993.)

6 Utility Maximizing Local Governments: Decentralized Inefficient Outcomes and Central Government Intervention (3)

1. *Zodrow and Mieszkowski, "Pigou, Tiebout, Property Taxation, and the Underprovision of Local Public Goods," *JUrbE*, 1986.
2. Kunce, "A Nash Tax Game Extending the Generality of the Henry George Theorem," *Economics Letters*, 2000.
3. Eggert and Haufler, "Capital Taxation and Production Efficiency in an Open Economy," *Economics Letters*, 1999.
4. *Wildasin, "Interjurisdictional Capital Mobility: Fiscal Externality and a Corrective Subsidy," *Journal of Urban Economics*, 1989.
5. *Wildasin, "Income Redistribution in a Common Labor Market," *American Economic Review*, 1991.
6. *Brueckner, "Fiscal Decentralization with Distortionary Taxation: Tiebout vs. Tax Competition," *International Tax and Public Finance*, 2004.
7. *Dhillon, Wooders, Zissimos, "Tax Competition Reconsidered," typescript, March 2004.
8. (Wildasin, "Nash Equilibria in Models of Fiscal Competition," *Journal of Public Economics*, 1988.)

7 Utility Maximizing Local Governments: Applications, Extensions, Other Directions (2)

1. *Qian and Roland, "Federalism and the Soft Budget Constraint," *American Economic Review*, December 1998.
2. *Cai and Treisman, "Does Competition for Capital Discipline Governments? Decentralization, Globalization, and Public Policy," *American Economic Review*, 2005.
3. Sinn, "The Selection Principle and Market Failure in Systems Competition," *Journal of Public Economics*, 1997.
4. (Hochman, Pines, Thisse, "On the Optimal Structure of Local Governments," *American Economic Review*, 1995.)
5. (Raff and Wilson, "Income Redistribution with Well-Informed Local Governments," *International Tax and Public Finance*, 1997.)
6. (Hendricks, "Mobility and Redistributive Politics," *Journal of Public Economic Theory*, 2001.)
7. (Kessler, Lulfesmann, Myers, "Redistribution, Fiscal Competition, and the Politics of Economic Integration," *Review of Economic Studies*, 2002.)

8 Non-Utility Maximizing Local Governments (3)

1. *Epple and Zelenitz, "The Implications of Competition Among Jurisdictions: Does Tiebout Need Politics?" *JPE*, 1981, 1197-1217.
2. *Henderson, "The Tiebout Model: Bring Back the Entrepreneurs," *Journal of Political Economy*, April 1985.
3. *Hoyt, "Competitive Jurisdictions, Congestion, and the Henry George Theorem," *Regional Science and Urban Economics*, 1991.
4. *Wilson, "The Property Tax: Competing Views and a Hybrid Theory," in *Public Finance and Public Policy in the New Century*, Cnossen and Sinn (eds.), MIT Press, 2003.
5. Brueckner, "Property Value Maximization and Public Sector Efficiency," *Journal of Urban Economics*, 1983.
6. (Scotchmer, "Local Public Goods in an Equilibrium: How Pecuniary Externalities Matter," *Regional Science and Urban Economics*, 1986.)

9 Open Agenda Majority Rule Models (2)

1. *Epple, Filimon, and Romer, "Equilibrium Among Local Jurisdictions: Toward an Integrated Treatment of Voting and Residential Choice," *Journal of Public Economics*, 1984.
2. *Epple and Romer, "Mobility and Redistribution," *JPE*, 1991.
3. *Calabrese, Epple, Romer and Sieg, "Local Public Good Provision: Voting, Peer Effects, and Mobility," *Journal of Public Economics*, 2006.
4. Hansen and Kessler, "(Non-)Existence of Equilibria in Multi-Community Models," *Journal of Urban Economics*, 2001.
5. Rose-Ackerman, Susan, "Market Models of Local Government: Exit, Voting, and the Land Market," *Journal of Urban Economics*, 1979.
6. (Ellickson, "Jurisdictional Fragmentation and Residential Choice," *AER Papers and Proceedings*, 1971.)
7. (Epple, Filimon, and Romer, "Housing, Voting, and Moving: Equilibrium in a model of local public goods with multiple jurisdiction," in J.V. Henderson, ed., *Research in Urban Economics*, vol. III, (JAI Press, Greenwich, Connecticut), 1983.)
8. (Epple, Filimon, and Romer, "Existence of Voting and Housing Equilibrium in a System of Communities with Property Taxes," *Regional Science and Urban Economics*, 1993.)
9. (Epple and Sieg, "Estimating Equilibrium Models of Local Jurisdictions," *Journal of Political Economy*, August 1999.)